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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/557,824	11/23/2005	Tomohiro Inoue	P70965US0	6055

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EXAMINER	
HAN, KWANG S	

ART UNIT	PAPER NUMBER
1795	

MAIL DATE	DELIVERY MODE
03/20/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/557,824	INOUE ET AL.	
	Examiner	Art Unit	
	Kwang Han	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 November 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 7-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 7-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

SEPARATOR FOR FUEL BATTERY

Examiner: K. Han SN: 10/557,824 Art Unit: 1795 March 20, 2009

DETAILED ACTION

1. The Applicant's amendment filed on November 19, 2008 was received. Claims 4-6 were cancelled. Claims 1-3 were amended. Claims 7-9 were added.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims Analysis

3. Claims 1, 2, and 3 include the recitation "made of a mixture of carbon powder and a resin" which was not present in the original claims and have not been underlined to indicate being newly added. For the purposes of prosecution it will assumed the applicant wishes to include the recitation as presented in the newly amended claims.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. The term "high viscosity" in claims 1-3 and 7-9 is a relative term which renders the claim indefinite. The term "high viscosity" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one

of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to which rubber materials would be included in the classification of a high viscosity rubber.

Claim Rejections - 35 USC § 102

6. The claim rejections under 35 U.S.C. 102(b) as being anticipated by Inoue on claims 1 and 4 are withdrawn, because claim 1 has been amended and claim 4 has been cancelled.

Claim Rejections - 35 USC § 103

7. The claim rejection under 35 U.S.C. 103(a) as unpatentable over Inoue in view of Chow et al. on claims 2 and 5 are withdrawn, because claim 2 has been amended and claim 4 has been cancelled.

8. The claim rejection under 35 U.S.C. 103(a) as unpatentable over Inoue in view of Ishigaki et al. on claims 3 and 6 are withdrawn, because claim 3 has been amended and claim 6 has been cancelled.

9. Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al. (US 6337120) in view of Inoue (JP 2001-332275, machine translation).

Regarding claims 1 and 7, Sasaki discloses a separator for a fuel cell (Column 1, Lines 6-13; Column 4, Lines 19-27) comprised of the following:

- a separator main body made of a mixture of carbon powder and resin (Column 4, Lines 32-36),
- a gasket made of a rubber material and provided with lip portions on upper and lower surfaces (Column 5, Line 49 - Column 6, Line 58; Figure 6),
- the separator main body provided on both surfaces with gasket forming grooves (Figure 6), and
- gasket forming grooves being provided with a through hole (Figure 6).

Sasaki further discloses widths of the grooves for the separator to be formed for preventing the gasket from displacement from its initial position (Column 6, Lines 10-13) in various size ranges (Column 5, Lines 58-64) but does not specifically disclose the relative groove widths at different surfaces.

Inoue teaches the groove widths of the separator on opposite sides of the separator to be of different widths to accommodate the gaskets formed through the through-holes between the two widths of the separator [0027, 0028] (Drawings 12 and 14). The courts have held that optimization of a results effective variable such as the gasket groove width is not novel. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). It would have been obvious to one of ordinary skill in the art at the time of the invention to vary the groove width or any other size parameter on the surfaces of the separator main body since Sasaki teaches the groove width can be optimized for preventing the displacement of the gasket. It would also have been obvious to one of ordinary skill in the art at the time of the invention to vary the groove width or any other

size parameter on the surfaces of the separator main body since Inoue the grooves widths are defined to accommodate the gaskets of the separator.

It is noted that claims 1-3 and 7-9 are product-by-process claims. "Even though product-by-process are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In reThorpe, 777 F. 2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). The gasket of Sasaki et al. (US 6337120) is similar to that of the Applicant's, Applicant's gasket formed by high pressure injection molding of said rubber material is not given patentable weight in the claims.

Regarding claim 7, Sasaki discloses a separator for a fuel cell (Column 1, Lines 6-13; Column 4, Lines 19-27) comprised of the following:

- a separator main body made of a mixture of carbon powder and resin (Column 4, Lines 32-36),
- a gasket made of a rubber material and provided with lip portions on upper and lower surfaces (Column 5, Line 49 - Column 6, Line 58; Figure 6),
- the separator main body provided on both surfaces with gasket forming grooves (Figure 6), and
- gasket formed integrally in both surfaces of the separator body (Figure 6).

Sasaki further discloses widths of the grooves for the separator to be formed for preventing the gasket from displacement from its initial position (Column 6, Lines 10-13)

in various size ranges (Column 5, Lines 58-64) but does not specifically disclose the relative groove widths at different surfaces.

Inoue teaches the groove widths of the separator on opposite sides of the separator to be of different widths to accommodate the gaskets formed through the through-holes between the two widths of the separator [0027, 0028] (Drawings 12 and 14). The courts have held that optimization of a results effective variable such as the gasket groove width is not novel. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). It would have been obvious to one of ordinary skill in the art at the time of the invention to vary the groove width or any other size parameter on the surfaces of the separator main body since Sasaki teaches the groove width can be optimized for preventing the displacement of the gasket. It would also have been obvious to one of ordinary skill in the art at the time of the invention to vary the groove width or any other size parameter on the surfaces of the separator main body since Inoue the grooves widths are defined to accommodate the gaskets of the separator.

10. Claims 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al. in view of Chow et al. (WO 94/09520, previously cited).

Regarding claims 2 and 8, the teachings of Sasaki as discussed above are herein incorporated. The applicant is directed towards the discussion regarding claim 1. Sasaki is silent towards the use of an inclined shape for the groove side surfaces.

Chow et al. teaches the use of a separator (44, 50) for a fuel cell with an inclined shape for the groove side surfaces (Figure 5) for the benefit of accommodating

preformed gaskets to be disposed (Page 7, Lines 14-18). It would have been obvious to one of ordinary skill in the art at time of the invention to apply Chow's inclined shapes gasket channels in Inoue's fuel cell separator because Chow teaches it provides for the benefit of minimizing changes in position or separation of the gasket when sealing the fuel cell.

11. Claims 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al. in view of Ishigaki et al. (JP 2000-356267, previously cited).

Regarding claims 3 and 9, the teachings of Sasaki as discussed above are herein incorporated. The applicant is directed towards the discussion concerning claim 1. Sasaki teaches a seal with a gasket but is silent as to a curvature provided in the corner positions of the groove bottom surfaces. Sasaki and Ishigaki et al. are analogous art because both deal with sealing of components performed by a gasket and a matching groove.

Ishigaki et al. teaches the use of a fluid seal with a gasket (1) and a curvature provided in a corner of the groove bottom position [Abstract, 0001] (Drawing 1) for the benefit of providing an excellent fluid sealing performance at low loads to lengthen the service life of a device. It would have been obvious to one of ordinary skill in the art at the time of the invention to apply Ishigaki's fluid seal with a curved bottom position in the groove in Inoue's separator for the benefit of forming an excellent seal with the gasket at low loads to lengthen the service life of the fuel cell.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact/Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kwang Han whose telephone number is (571) 270-5264. The examiner can normally be reached on Monday through Friday 8:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on (571) 272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. H./
Examiner, Art Unit 1795

/Dah-Wei D. Yuan/
Supervisory Patent Examiner, Art Unit 1795